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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/910,412	07/21/2001	Itzhak Gurantz	9202	2398

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EXAMINER	
CHOWDHURY, SUMAIYA A	
ART UNIT	PAPER NUMBER
2623	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	09/910,412	GURANTZ ET AL.	
	Examiner	Art Unit	
	Sumaiya A. Chowdhury	2623	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *25 May 2007*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *5,18 and 23-37* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *5,18 and 23-37* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 5/25/07 has been entered.

Response to Arguments

2. Applicant's arguments with respect to claims 5, 18, and 23-37, have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claim ~~5~~ 5, 25, & 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kliger (US 2002/0069417) in view of Wu (US 2002/0088005).

Note: Information relied on from Kliger can be found in provisional applications 60/229263 and 60/275060

As for claim 5, Kliger teaches discloses a signal distribution network for transmitting modulated signals using building wiring containing a plurality of branches as a communication channel comprising:

a network interface device (14) located at the point of entry of the building wiring () that reflects network signals originating in the building wiring wherein the reflection introduced by the network interface device produces a multipath signal in the wiring branches that creates impairments to the performance of the communication channel – [0043].

at least one signal splitter (24') – [0043]; and

a plurality of terminal devices (33) – [0044];

wherein the network interface device provides a path for terminal devices to transmit to and receive from other terminal devices and wherein terminal devices communicate directly with each other to form the signal distribution network – [0048], [0047], [0050];

The signal distribution network uses coaxial cable wiring;

However, Kliger fails to teach:

The signal modulation used by the terminal devices is orthogonal frequency division multiplexing to overcome the communication channel impairments caused by the network interface device;

In an analogous art, Wu teaches:

The signal modulation used by the terminal devices is orthogonal frequency division multiplexing to overcome communication impairments (multipath distortion and interference) caused by the network interface device – [0048], [0058], [0060];

It would have been obvious to one of ordinary skill in the art at the time of applicant's invention to modify Kliger's invention to include the above mentioned limitation, as taught by Wu, in order to allow recovery of data.

As for claim 25, Kliger teaches:

a network interface device (14—fig. 2) connected to the point of entry of the building wiring comprising:

a first port (18-fig. 2) connected to the point of entry side of a branch of the building wiring – [0051];

a second port (24'-fig. 2) connected to the terminal device side of a branch of the building wiring – [0051];

a frequency selective signal reflecting circuit (40-fig. 2) connected between the first and second port – [0051]-[0053];

wherein a signal received at the second port is reflected out the second port and back into all the building wiring branches and a reflected signal path is created that produces a multipath signal in the wiring branches that creates impairments to the performance of the communication channel – [0043], [0051];

a plurality of terminal devices connected to the wiring branches, each terminal device bidirectionally communicating with other terminal devices through the reflected signal path created by the network interface device– [0047], [0048], [0050], [0043].

However, Kliger fails to teach:

The signal modulation used by the terminal devices is orthogonal frequency division multiplexing to overcome the communication channel impairments caused by the network interface device;

In an analogous art, Wu teaches:

The signal modulation used by the terminal devices is orthogonal frequency division multiplexing to overcome communication impairments (multipath distortion and interference) caused by the network interface device – [0048], [0058], [0060];

It would have been obvious to one of ordinary skill in the art at the time of applicant's invention to modify Kliger's invention to include the above mentioned limitation, as taught by Wu, in order to allow recovery of data.

As for claim 28, Kliger and Wu teach the claimed limitations. In particular, Kliger teaches the frequency used for communicating is above the cable television band – ([0052]; provisional application 60/275,060).

5. Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kliger and Wu as applied to claim 5 above, and further in view of Manssen (5809421).

As for claim 18, Kliger and Wu fails to teach sharing the communication channel between terminal devices using time division duplex protocol for communications that are synchronized by broadcasting a beacon message on the network.

In an analogous art, Manssen teaches sharing the communication channel between locations using time division duplex protocol for communications that are synchronized by broadcasting a beacon message on the network – col. 8, lines 30-48, col. 4, lines 9-25.

It would have been obvious to one of ordinary skill in the art at the time of applicant's invention to modify Kliger and Wu's invention to include the above mentioned limitation, as taught by Manssen, for the advantage of preventing co-channel interference.

6. Claim 23 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kliger, Wu, and Manssen as applied to claim 18 above, and further in view of Ling (6771706).

As for claim 23, Kliger, Wu, and Manssen fail to teach wherein the modulation order of each OFDM carrier is adjusted according to the SNR at each OFDM carrier frequency to overcome frequency selective channel impairments present in the coaxial building wiring cause by the reflections from the network interface device.

In an analogous art, Ling teaches the modulation order of each OFDM carrier is adjusted according to the SNR at each OFDM carrier frequency to overcome frequency selective channel impairments present – col. 20, lines 45-60.

It would have been obvious to one of ordinary skill in the art at the time of applicant's invention to modify Kliger, Wu, and Manssen's invention to include the above mentioned limitation, as taught by Ling, in order to achieve high throughput or bit rate for a particular level of performance.

7. Claim 24 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kliger, Wu, and Manssen as applied to claim 18 above, and further in view of Zhang (7151740).

As for claim 24, Kliger, Wu, and Manssen fail to teach wherein the power level of each OFDM carrier is adjusted according to the signal loss at each OFDM carrier frequency to overcome frequency selective channel impairments present in the coaxial building wiring caused by the reflections from the network interface device.

In an analogous art, Zhang teaches the power level of each OFDM carrier is adjusted according to the signal loss at each OFDM carrier frequency to overcome frequency selective channel impairments present – col. 3, lines 29-52, Abstract.

It would have been obvious to one of ordinary skill in the art at the time of applicant's invention to modify Kliger, Wu, and Manssen's invention to include the

above mentioned limitation, as taught by Zhang, in order to overcome transmission power loss.

8. Claim 26 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kliger and Wu as applied to claim 25 above, and further in view of Ling.

As for claim 26, Kliger and Wu fail to teach wherein the modulation order of each OFDM carrier is adjusted according to the SNR at each OFDM carrier frequency to overcome frequency selective channel impairments present in the coaxial building wiring cause by the reflections from the network interface device.

In an analogous art, Ling teaches the modulation order of each OFDM carrier is adjusted according to the SNR at each OFDM carrier frequency to overcome frequency selective channel impairments present – col. 20, lines 45-60.

It would have been obvious to one of ordinary skill in the art at the time of applicant's invention to modify Kliger and Wu's invention to include the above mentioned limitation, as taught by Ling, in order to achieve high throughput or bit rate for a particular level of performance.

9. Claim 27 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kliger and Wu as applied to claim 25 above, and further in view of Zhang.

As for claim 27, Kliger and Wu fail to teach wherein the power level of each OFDM carrier is adjusted according to the signal loss at each OFDM carrier frequency to overcome frequency selective channel impairments present in the coaxial building wiring caused by the reflections from the network interface device.

In an analogous art, Zhang teaches the power level of each OFDM carrier is adjusted according to the signal loss at each OFDM carrier frequency to overcome frequency selective channel impairments present – col. 3, lines 29-52, Abstract.

It would have been obvious to one of ordinary skill in the art at the time of applicant's invention to modify Kliger and Wu's invention to include the above mentioned limitation, as taught by Zhang, in order to overcome transmission power loss.

10. Claim 36 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kliger and Wu as applied to claim 25 above, and further in view of Manssen.

As for claim 36, Kliger and Wu fail to teach sharing the communication channel between terminal devices using time division duplex protocol for communications that are synchronized by broadcasting a beacon message on the network.

In an analogous art, Manssen teaches sharing the communication channel between locations using time division duplex protocol for communications that are synchronized by broadcasting a beacon message on the network – col. 8, lines 30-48, col. 4, lines 9-25.

It would have been obvious to one of ordinary skill in the art at the time of applicant's invention to modify Kliger and Wu's invention to include the above mentioned limitation, as taught by Manssen, for the advantage of preventing co-channel interference.

11. Claims 29, 30, and 33, are rejected under 35 U.S.C. 103(a) as being unpatentable over Kliger in view of Wu and Mukherjee (6226322)

Claim 29 contains the limitations of claims 5 and 25 and is analyzed as previously discussed with respect to those claims. Claim 29 additionally calls for the following:

wherein the terminal devices perform equalization on the received signal that restores a flat frequency response to overcome the communication channel impairments caused by the multipath signals.

In an analogous art, Mukherjee teaches the terminal devices perform equalization on the received signal signal that restores a flat frequency response to overcome the communication channel impairments caused by the multipath signals – col. 8, lines 40-52.

It would have been obvious to one of ordinary skill in the art at the time of applicant's invention to modify Kliger and Wu's invention to include the above

mentioned limitation, as taught by Mukherjee, for the advantage of flattening the signal spectrum and compensating for phase distortion.

As for claim 30, Kliger, Wu, and Mukherjee disclose the claimed limitations. In particular, Mukherjee teaches equalization is frequency domain equalization.

As for claim 33, Kliger, Wu, and Mukherjee disclose the claimed limitations. In particular, Wu teaches wherein the terminal devices use orthogonal frequency division multiplexing (OFDM) modulation to overcome the communication channel impairments caused by the reflected signals–[0048], [0058], [0060];

12. Claim 31 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kliger, Wu, and Mukherjee as applied to claim 29 above, and further in view of Kapoor (6,396,886).

As for claim 31, Kliger, Wu, and Mukherjee fail to teach wherein equalization is time domain equalization.

In an analogous art, Kapoor teaches wherein equalization is time domain equalization that restores a flat frequency response to overcome multipath effects – col. 6, lines 47-63.

It would have been obvious to one of ordinary skill in the art at the time of applicant's invention to modify Kliger, Wu, and Mukherjee's invention to include the

above mentioned limitation, as taught by Kapoor, for the advantage of restoring the frequency envelope.

13. Claims 32, 34, and 35, are rejected under 35 U.S.C. 103(a) as being unpatentable over Kliger, Wu, and Mukherjee as applied to claim 29 above, and further in view of Ise (6778601).

As for claim 32, Kliger, Wu, and Mukherjee fail to teach wherein equalization is adaptive .

In an analogous art, Ise teaches wherein equalization is adaptive (see abstract, col. 4, lines 33-47, col. 5, lines 17-27, lines 40-50).

It would have been obvious to one of ordinary skill in the art at the time of applicant's invention to modify Kliger, Wu, and Mukherjee's invention to include the above mentioned limitation, as taught by Ise, in order to inhibit an excessive peak in the filter characteristic.

As for claim 34, Kliger, Wu, Mukherjee, and Ise disclose the claimed limitations. In particular, Wu teaches wherein the terminal devices use orthogonal frequency division multiplexing (OFDM) modulation to overcome the communication channel impairments caused by the reflected signals –[0048], [0058], [0060];

As for claim 35, Kliger, Wu, Mukherjee, and Ise disclose the claimed limitations. In particular, Wu teaches wherein the terminal devices use forward error correction to recover the transmitted signal without errors – [0062].

14. Claim 37 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kliger, Wu, and Mukherjee as applied to claim 29 above, and further in view of Manssen.

As for claim 37, Kliger, Wu, and Mukherjee fails to teach sharing the communication channel between terminal devices using time division duplex protocol for communications that are synchronized by broadcasting a beacon message on the network.

In an analogous art, Manssen teaches sharing the communication channel between locations using time division duplex protocol for communications that are synchronized by broadcasting a beacon message on the network – col. 8, lines 30-48, col. 4, lines 9-25.

It would have been obvious to one of ordinary skill in the art at the time of applicant's invention to modify Kliger, Wu, and Mukherjee's invention to include the above mentioned limitation, as taught by Manssen, for the advantage of preventing co-channel interference.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sumaiya A. Chowdhury whose telephone number is (571) 272-8567. The examiner can normally be reached on Mon-Fri, 9-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Miller can be reached on (571) 272-7353. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

SAC

ANDREW Y. KOENIG
PRIMARY PATENT EXAMINER